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Covid-19 vaccination hesitancy

What you need to know

- Lack of covid-19 vaccine confidence poses direct and indirect threats to health and could derail efforts to end the current pandemic
- Vaccines' safety, efficacy and importance could be communicated to individuals and communities, using a variety of evidence-based strategies outlined here, to enable informed decision-making
- Tailored communication approaches to different groups to build confidence in vaccines and address the root causes of concerns are effective in increasing uptake. These include systemic and socioeconomic factors, improving access, provision of practical support and tackling misinformation through targeted public health campaigns

Covid-19 vaccination rollout is well underway, with over 700 million doses given worldwide by April 2021.¹ Vaccination is highly effective at reducing severe illness and death from Covid-19. Covid-19 vaccines are also safe with extremely low risks of severe adverse events.²⁻⁴ For example, the risk of blood clots following AstraZeneca vaccine is estimated 4 per million people vaccinated.⁵ A major threat to the impact of vaccination in preventing disease and death due to SARS-CoV-2 is low vaccine uptake. In this practice pointer, we offer an overview of vaccine hesitancy and some approaches that clinicians and policymakers can adopt at the individual and community level to help people make informed decisions about covid-19 vaccination.

What is vaccine hesitancy?

The World Health Organization (WHO) defines vaccine hesitancy as a 'delay in acceptance or refusal of safe vaccines despite availability of vaccine services.'⁶ It is caused by complex, context-specific factors that vary across time, place and specific vaccines, and is influenced by issues such as complacency, convenience, confidence and socio-demographic contexts.⁷ Vaccine hesitancy may also be related to misinformation and conspiracy theories which are often spread online including through social media.^{8 9} However, structural factors including health inequalities, socioeconomic disadvantages, systemic racism and access barriers are key

drivers of low confidence in vaccines and poor take-up.^{6 10-12} Vaccine hesitancy, although widely used, is a problematic term that does not adequately reflect these wider determinants that influence decisions to delay or refuse vaccination.

How common is vaccine hesitancy?

Vaccine hesitancy is a global problem. Surveys report that between 50% to 60% of all respondents worldwide would be willing to receive a covid-19 vaccine in 2021 with wide variations across countries.^{13 14} In the UK, surveys have found variation in willingness to have a vaccine between ethnic groups. The UK Household Longitudinal survey asked (in November 2021) 12035 participants "how likely or unlikely would you be to take the vaccine?" Overall only 18% of respondents were hesitant (answering unlikely or very unlikely), in contrast to high levels of hesitancy in people of black ethnicity (72%) followed by South Asians of Pakistani and Bangladeshi heritage (both 42%) and mixed ethnicities (32%); though levels of vaccine hesitancy were comparable to Whites in people of Chinese ethnicity, highlighting the heterogeneity between ethnic minorities.¹⁵ Recent data in the UK (as of 11 March 2021) reveal lower vaccination rates, among those eligible for vaccination, in Black African and Black Caribbean (58.8% and 68.7% respectively), Bangladeshi (72.7%) and Pakistani (74%) ethnic groups compared with White British (91.3%), and lower vaccination rates in people who live in more deprived areas (most deprived 87%, least deprived 92.1%).¹⁶

Higher vaccine hesitancy is also reported amongst women (female 21%; male 15%), younger age groups (28% in 25-34 years versus 14% in 55-64 years), and people with a lower education level (24% in secondary school graduates; 13% in university graduates).¹⁵ These data follow a historical trend in the UK of lower uptake of pneumococcal, influenza, rotavirus and shingles vaccines among socioeconomically disadvantaged individuals¹⁷⁻¹⁹ and ethnic minorities.^{12 20} Similarly, a lower uptake has been observed with childhood immunisations in ethnic minority populations.¹² Variation in covid-19 vaccination rates is also seen between religious groups. Vaccination rates have been lower in Muslim (72.3%), Buddhist (78.1%), Sikh (87%) and Hindu (87.1%) compared with Christian (91.1%) religious groups.¹⁶ In addition, individuals who are uncertain about receiving vaccination form a larger proportion than those who are unwilling (23% versus 14% respectively) and therefore a stronger group to focus a potential intervention.²¹ Nevertheless, it is very difficult to distinguish between these two groups;

therefore, public health campaigns should focus on providing information and increasing trust in the safety and efficacy of covid-19 vaccination amongst both these groups.²¹

Vaccine hesitancy among healthcare workers (HCWs) is an area of particular concern due to their role as trusted sources of health information and in spreading healthcare-acquired infections. This is particularly the case in ethnic minority HCWs as they comprise a higher proportion of NHS workers in the UK compared to the working-age population. Recent data from one NHS trust shows lower covid-19 vaccination rates in ethnic minority HCWs (70.9% in white workers v 58.5% in South Asian and 36.8% in black workers; $P < 0.001$ for both).²² Additionally, vaccine uptake in HCWs vary with previously reported low uptake (37%) of H1N1 vaccine amongst support staff.⁸ A quarter (26%) of NHS trusts in England did not reach 70% coverage for seasonal influenza vaccination in HCWs in 2019-2020.¹²

What are the causes of covid-19 vaccine hesitancy?

Confidence in the importance of vaccines has the strongest association with vaccine take-up; however confidence in the importance (necessity and value), safety and effectiveness of vaccines fell in many countries between 2015 to 2019.²³ This waning confidence in vaccines led the WHO to list vaccine hesitancy among the top ten global threats to health in 2019.²⁴ Drivers of low confidence in covid-19 vaccination are listed in box 1. A recent survey highlighted that the main reason for hesitancy were concerns about future unknown effects, with 42.7% of participants specifying this.¹⁵ Less common reasons included those under the bracket of 'other' (12.2%), worries about side effects (11.4%), other people in greater need given limited supply (7.7%) and lack of trust with vaccines (7.6%).¹⁵ However, black ethnicities were more likely to state that they 'Don't trust vaccines' compared to whites (29.2% vs 5.7%) and people of Pakistani and Bangladeshi ethnicities cited concerns about vaccine side effects (35.4% vs 8.6%).¹⁵ Some reports indicate a rise in vaccine hesitancy following the AstraZeneca vaccine safety scare across Europe and Africa.^{25 26} Historical precedents show that widely publicised safety scares can have profound and long-lasting impact on vaccine confidence.²⁷

Box 1 Causes and drivers of low confidence in covid-19 vaccines^{6 8 10 12 28}

- Socio-economic and healthcare inequalities and inequities
- Structural racism and previously unethical research done on some ethnic minority groups
- Social disadvantages including low level of education and poor access to accurate information
- Misinformation, disinformation, rumours and conspiracy theories in particular through social media
- Lack of effective public health messages or targeted campaigns
- Access barriers including vaccine delivery time, location and cost related to socio-economic inequalities and marginalisation

Box 2 Stated reasons for low covid-19 vaccine take-up amongst the public^{23 29 30}

- Concerns about long-term effects, side effects and unknown future effects on health
- Previous side effects to other routine vaccines such as influenza vaccine
- Low confidence in vaccines, including their importance, safety and efficacy
- Lack of trust in the manufacturing and country of production of vaccines, vaccine technology, the pharmaceutical industry, government and public health bodies
- Concerns about the speed of development of covid-19 vaccines
- Concerns about vaccines' incompatibility with religious beliefs
- Previously negative healthcare experiences including racial discrimination
- Lower risk and perception of lower risk of covid-19 (especially amongst younger age groups)
- Lack of communication from trusted providers and community leaders
- Practical concerns such as inconvenient vaccine delivery time and location
- Not offered vaccine due to inaccurate patient contact information
- Direct and indirect costs of vaccine (in some low and middle income countries)
- Apprehensions surrounding fertility, pregnancy and breast-feeding
- Belief in conspiracy theories such as covid-19 not being real, or that vaccines modify DNA
- Recent covid-19 infection

How to approach covid-19 vaccine hesitancy

Approaching vaccine hesitancy is complex, and therefore no single intervention can address this entirely, especially in the context of covid-19 where evidence is currently limited.³¹ Furthermore, these single approaches would be hard to apply in different settings and populations. When considering the most effective methods to increase vaccine uptake, these would be comprehensive multi-component approaches tailored to the local population combined with good communication at an individual level.³¹ At a broader national level, this would also include traditional media channels (for example, television, radio, public transport advertising and the internet) and social media campaigns using visually appealing short simple messages to engage different groups regarding public health policies and countering any misinformation.^{32 33}

Recognition of barriers to uptake (box 2) is important to inform appropriate interventions to address them (box 3). Historically, interventions based on reminder/recall notifications have improved vaccination uptake amongst different groups and settings, although there is limited evidence to support their use specifically for addressing hesitancy.^{28 34} A multifaceted, non-stigmatising approach is therefore needed to share communication (in a variety of mediums) from trusted sources.¹² The key is to build confidence, particularly listening to people's concerns, being respectful of different religious or cultural beliefs, and awareness of historically-rooted understandable mistrust, as well as other ethical considerations around clinical interventions.¹² Vaccine-hesitant individuals are not 'anti-vaxxers' and this needs to be acknowledged. They will usually be open to engage in dialogue about vaccine safety, efficacy and importance, and discuss the risks and benefits of vaccination.

Box 3 Summary of strategies for interventions to increase vaccination uptake^{12 31 35}

1. Tailored communication from trusted sources such as community representatives, healthcare providers and local authorities that is culturally relevant and accessible in multiple languages. And builds confidence in the importance, safety and effectiveness of

vaccines using different types of traditional media and social media, targeting misinformation and sharing success stories

2. Access to community groups and local NHS services: ensuring convenience with vaccines being readily available; flexible delivery models in the community, GP surgery and outreach programmes; ensuring ease of transportation; directly targeting under-vaccinated populations

3. Engagement by community champions, youth ambassadors, faith leaders, healthcare workers and regulators: raising knowledge and awareness on vaccinations; encouraging healthcare professionals to recommend covid-19 vaccination; celebrating household members, friends, relatives and role models being vaccinated; fostering an approach of community immunity and helping others; continuous, open and transparent dialogue with locally developed action plans

4. Training and education of those involved with engagement activities at a local level: using relevant educational materials (eLearning modules) in presentations and communication skills training

Healthcare workers (HCWs) are the most trusted source of information on vaccination and can influence local vaccination rates through individual and population level approaches. At an individual level, effective communication that targets capability (knowledge and skills), opportunity (social norms and physical resources) and motivation (analytic decision-making and behaviours) will better convey health messages.³⁶ HCWs working alongside local authority members, faith leaders and ‘Community Champions’ can facilitate engagement, guide household decision-makers and make vaccine recommendations.^{12 37}

Improving access and removing barriers

Minimising practical obstacles to accessing covid-19 vaccination is crucial. Consider how one can improve convenience through multiple reminders to attend for vaccination and offering appointments outside of normal working hours in the evenings or weekends. People with disabilities or those who have been shielding may find it particularly hard to attend a vaccination appointment. Therefore, considering an individual’s distance to the vaccination

site, offering to arrange appropriate transportation or utilising home-visiting facilities can maximize access for these patients.¹² Vaccination sites outside of formal healthcare settings such as community-based settings, places of worship and work-based environments can offer a degree of familiarity and enable reach within communities that distrust government or medical sources.³⁷ They also offer the opportunity for peer support from friends, family members and colleagues who have agreed to be vaccinated.

Community engagement and local-level interventions

The WHO has proposed a number of recommendations that could be applied here in the context of covid-19 vaccinations³¹. Dialogue-based interventions promote discussions between those implementing desired strategies for vaccination and the target community. For covid-19 vaccination, this would centre on involving appropriate religious or traditional community leaders, both male and female, who can engage key audiences through open discussion, advocacy and integrated community activities.²⁸ Where appropriate, this could be alongside group discussions with HCWs in local settings to improve awareness, reinforce messages and promote consistency.^{28 31 32} Having readily available online material for HCWs and vaccine recipients, such as eLearning modules, that reinforces messaging behind vaccine safety and effectiveness can consolidate a unified approach in tackling hesitancy.³²

Setting a communication agenda through different forums can be an effective strategy to promote covid-19 vaccination. This should include active engagement from health, political, community, legal and academic representatives at a local level to help authorities understand relevant issues and build trust with community partners.³⁶ Pre-testing and co-production of material, either written, audio or visual, could be translated into a range of suitable languages or in a format accessible to sub-groups, with cultural validation of health messages.³⁶ Resources specific to different sub-groups and those at higher risk of hesitancy, such as ethnic minority communities, pregnant women, faith groups and others should be readily available and easily accessible from a single source.^{35 38} The NHS Coronavirus (COVID-19) Resource Centre is a portal that contains downloadable material to support communications.³⁹ These have been created in line with the governmental covid-19 vaccine action plan and a further framework to maximize uptake in underserved communities, which places an emphasis on community engagement using relevant case studies as examples.^{40 41}

Policy makers and other relevant stakeholders could use online platforms at a community level to provide factual information and build confidence amongst marginalized sub-groups.^{21 42} Recent evidence from two pilot programmes in California has emphasized the importance of community engagement, in addressing disparities in covid-19 transmission.⁴³ They demonstrated that having multilingual, culturally-sensitive information delivered by empowered community spokespeople at mobile testing sites can maximize participation, address these inequalities and be translated as part of a local covid-19 vaccination strategy.⁴³ ⁴⁴ These interventions (box 3) will need careful evaluation by policymakers to identify those that have worked well and those that require strengthening.¹² Regular reporting of vaccine uptake at a local level by different population demographics, including ethnicity, can help to monitor the overall vaccine coverage and where resources need to be further targeted.¹²

Communicating vaccination with a patient

Discussion and engagement with vaccine-hesitant patients should be conducted in an open, honest and non-judgemental manner (boxes 5 and 6).⁴⁵ The literature refers to any discussion between those implementing a strategy and the target community as a dialogue-based individual-level intervention²⁸; for example, actively calling patients who have not received a vaccine. Various approaches have been studied, some incorporating online or paper-based resources to inform patients of perceived benefits and safety issues. One simple example is the ‘elicit-share-elicit’ approach.³⁵ The HCW asks open-ended questions to identify concerns and then offers to share their expertise about this concern by providing solicited explanations to any myths or fallacies. Tailored education based on self-reported race, specific attitudes and previous experiences have also been shown to be beneficial.⁴⁵ . This maintains an empathetic relationship, whilst also providing an opportunity to communicate risk and support decision-making. There is however currently a lack of evidence as to whether different HCWs versus allied staff in administrative roles who discuss vaccination has an overall impact on uptake. When responding to legitimate concerns regarding the speed of the vaccine roll-out, HCWs could highlight the accelerated collaborative international drive that has taken place, which has occurred without compromising on scientific rigour to establish safety and efficacy, and will be continuously monitored by regulators. Recent concerns over a possible link between

coronavirus vaccines and rare blood clots demonstrate that this monitoring is taking place, and can even detect serious side effects as rare as one in 250,000 people vaccinated.⁴⁶ This process of identifying patients' ideas or concerns is a core communication skill for any HCW and is in line with Neighbour's consultation model, which emphasises the importance of connecting and summarizing.⁴⁷

Exploring the person's priorities, be it what they have looked forward to, or missed, most during the current pandemic, can help to contextualize the importance of the vaccination programme as a collective effort to enable society to come out of lockdown, reverse restrictions, and minimise economic hardships.

One of the key difficulties can be communicating risk, for example, the risk of developing severe infection from covid-19 versus the risk of developing symptoms following vaccination. Understanding patients' perceptions of risk and health beliefs is key to establish a shared dialogue through which HCWs can discuss data clearly using simplified language where appropriate. Educating patients on the dynamic, evolving and at times uncertain nature of scientific evidence is also imperative, especially in the context of covid-19 and vaccines. Another complex situation arises when HCWs are faced with exploring conspiracy theories in relation to covid-19 or the vaccination programme; the efforts of debunking myths may become very challenging, and so it can be helpful to find common ground, pick the relevant battles and continuously refer to agreed guidance among experts.³⁵

Box 5 Individual-level interventions for healthcare workers⁴⁵

- Educational online or written material
- Specialist immunization clinics
- Tailored education
- 'Elicit-share-elicited' approach
- Active listening
- Motivational interviewing

Box 6 Top tips for HCWs communicating with vaccine-hesitant patients³⁸

- Be aware of cultural and emotional differences

- Recognize the unique contexts in their environments with difficulties in accessing healthcare and adhering to public health guidance
- Provide clear and up-to-date guidance
- Repeatedly check understanding
- Adjust styles for differing literacy, education and language levels
- Have reliable, up to date and accessible sources of information on-hand
- Avoid using jargon and stigmatising language
- Support equity by identifying and targeting vulnerable groups

Box 7 Examples of online resources

NHS Choices: Coronavirus vaccine <https://www.nhs.uk/conditions/vaccinations/>

Coronavirus (COVID-19) Resource Centre <https://coronavirusresources.phe.gov.uk/covid-19-vaccine/resources/>

Vaccine Knowledge Project <https://vk.ovg.ox.ac.uk/vk/>

Video by Gavi the Vaccine Alliance: four types of vaccines and how they work
<https://www.youtube.com/watch?v=IFjIVIIcCvc>

WHO Global Vaccine Safety https://www.who.int/vaccine_safety/en/

US Centres for Disease Control and Prevention: Vaccines and Immunisations
<https://www.cdc.gov/vaccines/covid-19/index.html>

The covid-19 Vaccine Communication Handbook <https://hackmd.io/@scibehC19vax/home>

Johns Hopkins Medicine <https://www.hopkinsmedicine.org/health/conditions-and-diseases/coronavirus/is-the-covid19-vaccine-safe>

British Medical Association – covid-19: how to communicate with different groups about the vaccine
<https://www.bma.org.uk/advice-and-support/covid-19/vaccines/covid-19-how-to-communicate-with-different-groups-about-the-vaccine>

Education into practice

- Do you have a local policy for identifying and engaging vaccine-hesitant patients in general and specifically covid-19 vaccine hesitancy?
- What strategies have you used to increase vaccine uptake in your facility and how have you monitored their impact?
- What online and community resources do you have access to for increasing vaccine confidence?

How patients were involved in the creation of this article

A patient read the manuscript and provided feedback on the relevance and usefulness of the recommendations. The patient specifically requested that we also discuss the root causes of low take-up of vaccine among ethnic minorities including wider determinants of health.

How this article was made

This article uses best available evidence, recent research papers, the latest advice from the World Health Organization (WHO) and expert opinion.

We searched systematic reviews, other relevant published research and latest guidelines using MEDLINE, EMBASE and Google Scholar. Additional resources were drawn from our personal datasets.

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